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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/789,931

02/27/2004

Roy Greeff

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6807

21186

7590

11/01/2005

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EXAMINER

LEE, BENNY T

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/789,931

Applicant(s)

GREEFF, ROY

Examiner

Benny Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6; 7-12; 13-17; 18-22; 13-29; 30-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                                     |

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The disclosure is objected to because of the following informalities: Page 3, note that the "Brief Description of the Figures" and the "Summary" sections should be relocated such that the "Summary" precedes the "Brief Description of the Figures" as per PTO guide lines; line 19, note that the subheading "Summary" should be rephrased as --Summary of the Invention-- for a proper characterization. Page 4, line 1, in the subheading --of the Invention-- should follow "Description". Page 8, line 20, note that --velocities ( $V_{\text{even}}$ )-- should follow "even-mode" and --( $V_{\text{odd}}$ )-- should follow "velocities" for consistency with the corresponding drawing figure. Note that reference label "601" needs description in the specification. Appropriate correction is required.

The drawings are objected to because of the following: In figs. 1, 2, 4, 5, note that these drawing figures should be designated as --PRIOR ART--. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

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informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claims 2, 4, 5; 10; 16; 18-22; 23-29; 30-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, note that the recitation “the dielectric coating varies ... in the same direction as ...” is vague in meaning, even in light of the specification. Clarification is needed.

In claims 4, 18, 30 note that it is unclear which of the “at least (two/a first) microstrip lines” is intended by the recitation of “the microstrip lines”. Clarification is needed.

In claims 5, 10, note that “the first microstrip line” lacks strict antecedent basis.

In claims 5, 10, 16, 19, 29, 33, 34 note that it is unclear, even in light of the specification, what characterizes “the average conformal coating thickness”.

In claims 19, 22, 34 note that it is unclear how “a substrate” relates to the earlier recitation of “a substrate” as recited in claims 18, 30, respectively. Clarification is needed.

In claim 23, last paragraph, note that it is unclear how “the at least one microstrip” relates to the earlier recited “first microstrip line” and “second microstrip line”. Clarification is needed.

In claim 32, note that it is unclear how “microstrip lines” relate to the earlier recited “at least first and second microstrip lines”. Clarification is needed.

The following claims have been found objectionable for reasons set forth below:

In claims 5, 10, 16, 29, line 2 of each claim, note that “coat” should be rewritten as -- coating material-- for an appropriate characterization.

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In claims 6, 12, 15, note that “has a dielectric constant” should be rephrased as --has the dielectric constant thereof-- for clarity of description.

In claim 13, line 5, note that “that of” should be rephrased as --the dielectric constant of-- for an appropriate characterization.

In claim 17, last line, note that --first and second-- should precede “microstrip lines” for consistency of description.

In claim 18, line 5, note that “at least one” should be rephrased as --at least a first-- for consistency of description.

In claim 30, line 3, note that “a first of a ... line” should be rephrased as --a first one of ... lines-- for an appropriate characterization; line 6, note that --first and second-- should precede “microstrip lines” for consistency of description; line 10, note that “the at least one microstrip line in” should be deleted as being unnecessary.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5; 13, 16; 23-26, 28, 29; 30-33 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by any one of Bruns, Maschotta and Anderson.

Note that each reference discloses a printed circuit board arrangement, comprising: a dielectric substrate (4 in Bruns; 2 in Maschotta; 14 in Anderson); a plurality of microstrip lines (8, 10, 12 in Bruns; not numbered in Maschotta; 12 in Anderson) disposed on the substrate and a ground plane (2 in Bruns; 1 in Maschotta; 16 in Anderson) disposed on an opposed surface of the

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dielectric substrate; a dielectric coating (6 in Bruns; 3 in Maschotta; 14 in Anderson) disposed over each of the microstrip lines, where the dielectric coating thickness (the tables in figs. 3a, 3b of Bruns; 4 times the substrate thickness in Maschotta;  $t=5.4$  mils in Anderson) is clearly thicker than one half the thickness of the dielectric substrate. As described in each reference, the effect of the dielectric coating provides for reduced cross talk between the adjacent conductors (e.g. in the forward or far end of the conductors as discussed by the abstract of Anderson). Note that in each reference the dielectric coating is a "conformal coating" which inherently increases the thickness relative to "the average conformal coating", as far as such a recitation can be understood.

Claims 6; 15; 27; 34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by either Maschotta or Anderson.

Note that each reference discloses that the dielectric coating is or can be the same as the dielectric material of the substrate. For example see the alternate embodiment in Maschotta and the common dielectric material (14) constituting the substrate and coating in Anderson.

Claim 14 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Maschotta.

Maschotta discloses that the material of the dielectric substrate may be a cloth glass (i.e. fiberglass).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 3, 4; 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Bruns, Maschotta and Anderson in view of Forbes et al.

The primary references disclose the claimed invention except for the explicit disclosure of driving and receiving circuitry including such circuitry being memory circuitry.

Forbes et al discloses in Fig. 9 thereof, a transmission line system (920) operatively connected between a driver (e.g. 910) and a receiver (930). Moreover, as described in the specification of Forbes et al (e.g. cols 4, 5), a preferred application of the Forbes et al transmission line system is for dynamic random access memory (i.e. DRAM).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have similarly applied the transmission lines of any one of the primary references for use in driving and receiving circuitry for DRAM applications, such as taught by Forbes et al. Such a modification would have been considered an obvious substitution of art recognized transmission line structures, which would have provided the same signal transmission effect, thereby suggesting the obviousness of such a modification.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maschotta or Anderson in view of Forbes et al.

As described in the preceding rejection, it would have been obvious to have applied the transmission line arrangement of either primary reference to a DRAM arrangement for the obvious reason stated therein. Moreover, note that Maschotta or Anderson provides for the dielectric material of the dielectric coating to be the same material as that of the dielectric substrate.

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Claims 17; 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruns, Moschotta or Anderson in view of Adachi.

Note that each of the above primary references discloses the claimed invention, except for the recitation that the microstrip conductors provide reduced propagation delay.

Adachi provides an exemplary teaching of placing a dielectric layer over microstrip conductors, the resultant arrangement causes the "signal propagation to be improved in speed" (i.e. corresponding to a reduction in propagation delay) as described in the abstract thereof.

Accordingly, it would have been obvious in view of the reference, taken as a whole, to have realized that by placing dielectric layers over the microstrip conductors of any one of the primary references, such transmission line structures obviously would have provided the function of reduced propagation delay, especially in view of the recognition thereof by Adachi.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maschotta or Anderson in view of Adachi.

As described in the above rejection, Maschotta or Anderson discloses the substrate and the dielectric coating being the same material, and when combined with Adachi provides an arrangement, which obviously provides for reduced propagation delay.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.



B. Lee

BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817